

Daily GLOWBUGS

Digest: V1 #37

via AB4EL Web Digests @ SunSITE

Purpose: building and operating vacuum tube-based QRP rigs

[AB4EL Ham Radio Homepage @ SunSITE](#)

%%%% GlowBugs %%%% GlowBugs %%%% GlowBugs %%%% GlowBugs %%%%

Subject: glowbugs V1 #37

glowbugs

Tuesday, May 20 1997

Volume 01 : Number 037

Date: Tue, 20 May 1997 15:58:46 +0200

From: Jan Axing <janax@li.icl.se>

Subject: Re: 6146 Transmitter (ECO tubes)

EWoodman@aol.com wrote:

[about power tubes suitable for ECO]

> I need to dig up some "real" tetrodes or pentodes without the internal
> connection.

>

> Eric KA1YRV

>

There is one pentode that would do very well; EL34 (and possibly 6CA7).
EL34 is a true pentode with separate supressor grid connection and 25W
Pa.

I think 6CA7 is a beam power tetrode with separate connection to the
beam

plates but I'm not sure, maybe someone else can fill in.

EL34 is still in production, Svetlana, Tesla (?) and Ei have them.

greetings...

- --

Jan, SM5GNN

Linkoeping, Sweden

Date: Tue, 20 May 1997 06:59:47 -0700 (PDT)

From: Ken Gordon <keng@uidaho.edu>

Subject: Re:6146 Transmitter and ECO...

On Tue, 20 May 1997 EWoodman@aol.com wrote:

>
> >I think the secret, in addition to using heavier crystals like the FT-243,
> >is to be very careful of the screen voltage and current. Since the
> >circuit SHOULD be an electron coupled oscillator wherein the screen is
> >actually the "plate" of the oscillator, this should work fine. If your
> >circuit is an ECO, then tubes such as the 6V6 will NOT work properly since
> >the suppressor grid is connected internally to the cathode, thus bypassing
> >the screen grid.
>
> OK, now that's got me wondering.....I always forget about that
> foolish suppressor grid. I had thought about trying out that "Barracks Bag
> VFO" which Bob, NA4G, has put out in the archives. That's an ECO and uses a
> 6L6, 6F6, 807, etc. It obviously works with those but I guess you're saying
> it would be better to stick in something like a 6AG7 to really optimize it. I
> assume that the suppressor grid is affecting the efficiency of the oscillator
> and also affecting how well the signal gets coupled to the plate. Seems like
> I need to dig up some "real" tetrodes or pentodes without the internal
> connection.

OK. For all who are wondering about this, here is a quotation on this matter taken from my RSGB "Radio Communication Handbook" edition of 1972, page 6.13, "...An important feature to note is that a pentode which has its suppressor grid internally connected to the cathode is unsuitable for the e.c.o. type of circuit since the cathode is at r.f. potential to earth. (i.e. ground) If the same r.f. potential is allowed to appear on the suppressor grid, direct capacitive coupling between the oscillator section and the output anode (plate) circuit will exist. A valve with a separate connection to the suppressor grid must therefore be chosen so that it can be earthed."

The edition which I have of Bill Orr's handbook says substantially the same thing, although I have not looked up the reference.

I also vaguely recall reading a discussion of the e..c.o. many years ago which addressed this problem and explained the operation of circuits which purported to be e.c.o. but actually worked on a different principle, i.e. the 6V6 oscillator.

BTW, to the list, there is very nice little transmitter described in QST for October 1979, page 34, entitled, "The CW-150 - A Classical Vacuum-Tube Transmitter". It is really neat! Uses a pair of 807/5933s.

Ken W7EKB

Date: Mon, 19 May 1997 10:03:01 -0500
From: Ray LaRue <"raylarue@gte.net"@gte.net>
Subject: Re: 810 info needed

Conard Murray wrote:

>
> Hello all,
> Does anyone have any design curves for the 810? I just obtained a
> transmitter (T-4/FRC) that uses a pair in PP for the PA.

> Thanks!
> de Conard WS4S
> Z-U~T
>
> Conard Murray WS4S Glowbugs Listowner
> 217 Dyer Avenue QRP-L #998
> Cookeville, TN 38501 Arizona scQRPion
> 615-526-4093
> Friend to all things GRC-19 and TCS
> <> Wise men still seek Him <>

The RCA Transmitting Tube Manual TT-5, c1962, p128, has the 810 specs in it, but no curves.

73,
Ray, W4BYG

Date: Tue, 20 May 1997 09:23:42 -0600
From: "Terry L. Dobler" <kj7f@micron.net>
Subject: Circuit Board Designers?

Gang,

Please forgive the slightly off topic post. Can anyone recomend a circuit board design and manufacturer. I have a small project for work that I would like to have about 40 boards made up for. Failing that, and perhaps more on topic, how about recomendations for PC board design software? It must be easy to operate please.

Cheers, Terry KJ7F

Date: Tue, 20 May 1997 11:30:13 -0400 (EDT)
From: EWoodman@aol.com
Subject: Re: 6146 Transmitter and ECO...

Aha! So that "direct capacitive coupling" sort of negates the benefit of the ECO, which is isolation between the oscillator and output stage. Makes sense to me.....I'll use a different tube.

Eric

Date: Mon, 19 May 1997 10:49:21 -0500
From: Ray LaRue <"raylarue@gte.net"@gte.net>
Subject: Tube info

A recent post got me looking into some of my stocks. I found a dozen or so 6AS7's. These were pulls from some RCA TV transmitters, circa mid 50's. I don't see them listed in any of my tube manuals. Don't see them listed on "nostalgiaair/otcr.htm". It is an octal base, ST16 glass enveloped tube somewhat similiar in size, to a 6B4G. Anyone have any data on this tube? Your attention is appreciated.

73,
W4BYG

Date: Tue, 20 May 1997 11:35:20 -0500 (CDT)
From: mjsilva@ix.netcom.com (michael silva)
Subject: Re: Tube info

>A recent post got me looking into some of my stocks. I found a dozen
>or so 6AS7's... Anyone have>any data on this tube?

These are dual triodes designed as series pass elements for voltage regulators. Each triode is (from memory) rated to 125 mA, and they have very low voltage drop across the tube, around 20 volts @ 50 mA (again from memory). Same pinout as 6SN7, I think. I can get you more info when I get home.

73,
Mike, KK6GM

Date: Tue, 20 May 1997 13:02:08 -0400 (EDT)
From: leeboo@ct.net (Leon Wiltsey)
Subject: crystal types

>To: ba
>From: leeboo@ct.net (Leon Wiltsey)
>Subject: crystal types
>Cc:
>Bcc:
>X-Attachments:
>
>Hi gang need to know some xtal types.
>have some old xtals from when i used to be on the air,
>but do not know the types.
>Some are small rectangles about the size
>of a postage stamp with three screws to open them up
>Others have rounded corners sli smaller but no way
>to open them up some say cr47u others say ad2, also
> some say cr48u types and cr18u and finally some from bliley
>that say type ax2 The first ones mentioned and the bliley
>have matching pins, but the smaller ones with the rounded
>corners just seem to fit some smaller ceramic sockets I have.
>The pins on the rounded ones are smaller in diam. HELP
>

I SUB TO BOTH GLOWBUGS & BOATABCHORS

68 yr old semidisabled senior
(stroke got my balance & hand to eye coordination)
old old old ham but I'm back agn
now KF4RCL TECK+ (MUCH HAPPINESS)
PLAY KEYBOARD AND SING?
BUILD MOST OF MY STATION EQUIP
(tubes that is no SOLID STATE)

no trash music (anything composed after 1965)

Leon B Wiltsey (Lee)
4600 Lake Haven BLVD.
Sebring, Fl. 33872

SEBRING FL. THAT WONDERFUL PLACE WHERE THERE IS NO QRM
FROM ANYTHING LOCAL

Date: Tue, 20 May 1997 09:51:23 -0700
From: Robert Friess <Rfriess@ix.netcom.com>
Subject: WTB GRC-109 Receiver

Hey Gang,

Does anyone out there have a GRC-109, R-1104 receiver that they would like to sell? I have the transmitter and power supply but need a receiver to complete the set. Will pay a premium for a set in really good condition.

73,

Bob, N6CM

Date: Tue, 20 May 1997 14:14:52 -0400 (EDT)
From: rdkeys@csemail.cropsci.ncsu.edu
Subject: Re: 6146 Transmitter

> >I think the secret, in addition to using heavier crystals like the FT-243,
> >is to be very careful of the screen voltage and current. Since the
> >circuit SHOULD be an electron coupled oscillator wherein the screen is
> >actually the "plate" of the oscillator, this should work fine. If your
> >circuit is an ECO, then tubes such as the 6V6 will NOT work properly since
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> >the screen grid.
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> OK, now that's got me wondering.....I always forget about that
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> VFO" which Bob, NA4G, has put out in the archives. That's an ECO and uses a
> 6L6, 6F6, 807, etc. It obviously works with those but I guess you're saying
> it would be better to stick in something like a 6AG7 to really optimize it. I
> assume that the suppressor grid is affecting the efficiency of the oscillator
> and also affecting how well the signal gets coupled to the plate. Seems like
> I need to dig up some "real" tetrodes or pentodes without the internal
> connection.

Ideally, the real ECO designs would be a classical pentode where the suppressor grid is separate from the cathode or filament. The typical tube would be the 837 in modern designs or the 860 in original designs. There may be other more modern pentodes that will work, quite well.

The 6AG7 has been the small octal tube of choice for years. I forget the 9 pin and 7 pin numbers offhand (since I don't use those series tubes very often).

Practically, though, tubes such as the 6F6/6K6/6G6/6L6/6Y6/6V6 and a few others will work, but they are usually limited to 40M and under as oscillators. And, they need need to be rather heavily loaded with C (Hi-C designs) to minimise the effect of the ``coupling'' between the grid and plate circuits brough about by incomplete shielding (lack of the separate suppressor grid pin). One can design it to ground the cathode for rf and use it that way quite effectively, even with beam plates, and tied-to-cathode suppressors. If you have a choice, use tubes with non-tied elements. If you don't have that choice, go with one of the 6n6 class tubes. They work fine. On 160 and 80M, the difference is almost nil. On 40 meters, the 6n6 class tubes drift a little more and pull a little more than proper pentodes.

If you need to be really picky, use something like a 6SK7 or a 6SJ7 as the ECO tube, at milliwatt power and amplify up from that.

You don't need the purist's high degree of isolation in reality for most glowbugging operations, provided, you 1) choose the correct plate and screen voltages, 2) lightly load the oscillator, 3) choose the correct bypassing and feedback capacitances and/or feedback taps, and 4) build it solidly enough to be stable in the first place. In electron coupled oscillators of any type, high-c, and proper voltages are the most important design considerations, with proper feedback ``tap'' (capacitive or inductive), second, and structural integrity third, at least in my hands. It would be a good bit of historical perspective to go back and read the two articles by Jennings B. Dow, in Proc. IRE and in QST back about 1933 or so. He reviews effects of tube type, plate/screen voltages, and shows various feedback methods (Hartley, Colpitts, etc). Someone mentioned the RSGB handbook --- good stuff --- I will have to go back and reread mine.

J.K Clapp's modification of the electron coupled oscillator uses low-C, so you do need a good tube for that design, properly a pentode, or else it is driftypullycity.

A sleeper that we don't see too often is E.O. Seiler's oscillator. That is also a very good design, if you go back and look at the original article from about 1941 in QST.

If someone wanted to try a high power Dow oscillator, use an 803 tube. (I know Sandy is looking for an 860 for that, and the Navy used 860's and 861's as ECO's for years, but the 803 is probably more common).

If you want to try a high-power vfo, look at the RCA pentode xtal/vfo oscillator that uses an 860 or an 807. That design dates from 1927 and is the oscillator in Big Bertha Radiomarine. It was used in their marine gear for 25 years. To be around that long, it had to have been a good workable design. It is fine on 160/80M, but above that as the fundamental oscillator frequency, it will tend to be marginal (above about 6 mhz).

If you want to try a high-power xtal set (150watt 813 tube), look on the back cover RCA ads from about 1939 or so in QST, and there is a tiny little schematic, about an inch and a half square, that IF you blow it up several times, is a complete 150watt xtal oscillator using the 813 tube.

Generically, if you are mostly interested in 160/80M glowbugging, then almost anything will work as an oscillator. If you need to double/quadruple

up to 40 and beyond, then a little more care in oscillator design is needed. But, consider the TCS, it is not half bad on a stable power supply, and it uses 12A6's in the oscillator (functionally equivalent to a 6V6).

73/ZUT DE NA4G/Bob UP

Date: Tue, 20 May 1997 11:08:01 -0700 (MST)
From: Jeff Duntemann <jeffd@coriolis.com>
Subject: Re: Circuit Board Designers?

>Please forgive the slightly off topic post. Can anyone recomend
>a circuit board design and manufacturer. I have a small project
>for work that I would like to have about 40 boards made up for.

Nothing off-topic about it at all. I've added a couple of PC tube socket patterns to my Visio stencil of printed circuit art, and while I may not do an octal on a PC board, I intend to do a PC board if I can ever get my space charge receiver to work, which would be all 7 and 9 pin miniatures.

I have my circuit boards made by this outfit. They're very good and reasonably cheap:

Circuit Design
Mike Putnam
629 Kings Court
Central Point OR 97502
541-664-7904

You send him a crisp paper printout, and he makes film and does the boards.

>Failing that, and perhaps more on topic, how about recommendations
>for PC board design software? It must be easy to operate please.

I use Visio. It's just a draw program, but *very* easy to use. You don't get autorouting or anything like that. I have a stencil of common pads for ICs, transistors, and tubes, and just drag them around on the screen until they're right. It works for me, doing an occasional board. If you're really going to go after PC boards in a big way you'd be better off getting a "real" PC board design program. I've never used one and don't know that field very well. Others here may have more information.

- --73--

- --Jeff Duntemann KG7JF
Scottsdale, Arizona

Date: Tue, 20 May 1997 12:00:37 -0700 (PDT)
From: Ken Gordon <keng@uidaho.edu>
Subject: Re: Tube info

On Mon, 19 May 1997, Ray LaRue wrote:

> A recent post got me looking into some of my stocks. I found a dozen or
> so 6AS7's. These were pulls from some RCA TV transmitters, circa mid

> 50's. I don't see them listed in any of my tube manuals. Don't see
> them listed on "nostalgiaair/otcr.htm". It is an octal base, ST16
> glass enveloped tube somewhat similiar in size, to a 6B4G. Anyone have
> any data on this tube? Your attention is appreciated.
> 73,
> W4BYG

It is a dual-triode shunt regulator electrically identical to the 6080.

Date: Tue, 20 May 1997 11:58:08 -0700 (PDT)
From: Ken Gordon <keng@uidaho.edu>
Subject: Re: 6146 Transmitter and ECO...

On Tue, 20 May 1997 EWoodman@aol.com wrote:

> Aha! So that "direct capacitive coupling" sort of negates the benefit of the
> ECO, which is isolation between the oscillator and output stage. Makes sense
> to me.....I'll use a different tube.
>
> Eric

BTW, when I mentioned using the 6AG7 vs. the 6V6, I didn't mean, "...in
addition to...in the same circuit...", I meant, "...in place of..." The
6V6 is an excellent amp. but the 6AG7 puts out as much power as an
oscillator, perhaps a bit more.

Date: Tue, 20 May 1997 12:17:52 -0700 (PDT)
From: Ken Gordon <keng@uidaho.edu>
Subject: Re: 6146 Transmitter

> various feedback methods (Hartley, Colpitts, etc). Someone mentioned the
> RSGB handbook --- good stuff --- I will have to go back and reread mine.

That was me, Bob. It IS good stuff!!!

> A sleeper that we don't see too often is E.O. Seiler's oscillator. That
> is also a very good design, if you go back and look at the original article
> from about 1941 in QST.

My favorite at this point is the Vackar. I have not yet figured out how
to use the Seiler. Vackar oscillators, when properly built, seem to be
driftless and chirpless (well, almost...)

Ken W7EKB

Date: Tue, 20 May 1997 14:39:58 -0500 (CDT)
From: mjsilva@ix.netcom.com (michael silva)
Subject: Re: 6146 Transmitter

Bob wrote:

>The 6AG7 has been the small octal tube of choice for years. I forget
>the 9 pin and 7 pin numbers offhand (since I don't use those series
>tubes very often).

The 6CL6 is (nearly) the miniature 6AG7. 12BY7 and 5763 were also used very commonly. Towards the end of the tube era the ARRL Handbooks were pushing another tube (6GK6?). I've internalized the oscillator tube recommendations I've read to translate to "any (pentode) video amplifier", but I don't know if all video amp tubes have separate suppressor pins.

73,
Mike, KK6GM

Date: Tue, 20 May 1997 13:08:21 -0700 (MST)
From: Jeff Duntemann <jeffd@coriolis.com>
Subject: Vackar Oscillator (was: 6146 Transmitter)

>My favorite at this point is the Vackar. I have not yet figured out how
>to use the Seiler. Vackar oscillators, when properly built, seem to be
>driftless and chirpless (well, almost...)

I have the seminal article on the solid-state Vackar from *Ham Radio* in the Seventies. I would love to investigate a tube Vackar. Any pointers to articles? It would seem like the king of all VFOs.

Since you mentioned it in text I snipped out already, I'll second my recommendation to the group of any and all RSGB publications. They are MUCH more oriented to homebrewing than current ARRL pubs, and if you get the knack of local jargon like "earthed," "mains," and "valves," you'll find a tremendous amount of practical hard information.

- --73--

- --Jeff Duntemann KG7JF
Scottsdale, Arizona

Date: Tue, 20 May 1997 15:11:00 -0600
From: Alex Mendelsohn <alexm@pennwell.com>
Subject: RE: Circuit Board Designers?

Terry L. Dobler writes:

Subject: Circuit Board Designers?
Date: Tuesday, May 20, 1997 10:39AM

Gang,

Please forgive the slightly off topic post. Can anyone recommend a circuit board design and manufacturer. I have a small project for work that I would like to have about 40 boards made up for. Failing that, and perhaps more on topic, how about recommendations

for PC board design software? It must be easy to operate please.

Cheers, Terry KJ7F

Terry: check out

Advanced Circuits, Inc.
6875 East 48th Avenue
Denver, Colorado 80216-5310
800-289-1724.

It'll do fast turn boards in quantities as low as two each--even in multilayer technologies.

Go to www.advancedcircuits.com for more info.

Vy 73, Alex, AI2Q in Kennebunk, Maine .-.-.

Date: Tue, 20 May 1997 16:24:13 EDT

From: kmlh@juno.com

Subject: Re: Tube info

On Mon, 19 May 1997 10:49:21 -0500 Ray LaRue <"raylarue@gte.net"@gte.net> writes:

>A recent post got me looking into some of my stocks. I found a dozen
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>so 6AS7's. These were pulls from some RCA TV transmitters, circa mid
>50's. I don't see them listed in any of my tube manuals. Don't see
>them listed on "nostalgiaair/otcr.htm". It is an octal base, ST16
>glass enveloped tube somewhat similiar in size, to a 6B4G. Anyone
>have

>any data on this tube? Your attention is appreciated.

>73,

>W4BYG

Hi Ray, that tube (dual triode) was primarily used as a regulator in power supplies. A ruggedized version is the 6080 which is still widely found in lots of test equipment, military gear, etc. It is listed in RCA and GE industrial tube manuals and possibly others. I can mail or FAX you the specs if you wish.

73.....Carl KMLH

Date: Tue, 20 May 1997 17:18:04 -0400 (EDT)

From: leeboo@ct.net (Leon Wiltsey)

Subject: xtals

Hi gang
need some info.

I remember buying xtals way back from int xtal.
What I do npt remember are the vcarious types.

I have some the size of a small oostage stamp
but dont know the type, these are about this size I-----I

I I

I I

I-----I

have 3 little screws to open them up and on the
brand say PR type 2-z
Alsoome slightly small with rounded corners that you
cant open up

What are the most common types most trans use?

I SUB TO BOTH GLOWBUGS & BOATABCHORS

68 yr old semidisabled senior
(stroke got my balance & hand to eye coordination)
old old old ham but I'm back agn
now KF4RCL TECK+ (MUCH HAPPINESS)
PLAY KEYBOARD AND SING?
BUILD MOST OF MY STATION EQUIP
(tubes that is no SOLID STATE)

no trash music (anything composed after 1965)

Leon B Wiltsey (Lee)
4600 Lake Haven BLVD.
Sebring, Fl. 33872

SEBRING FL. THAT WONDERFUL PLACE WHERE THERE IS NO QRM
FROM ANYTHING LOCAL

Date: Tue, 20 May 1997 17:27:54 -0400 (EDT)
From: rdkeys@csemail.cropsci.ncsu.edu
Subject: Re: 6146 Transmitter

> >The 6AG7 has been the small octal tube of choice for years. I forget
> >the 9 pin and 7 pin numbers offhand (since I don't use those series
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> The 6CL6 is (nearly) the miniature 6AG7. 12BY7 and 5763 were also used
> very commonly. Towards the end of the tube era the ARRL Handbooks were
> pushing another tube (6GK6?). I've internalized the oscillator tube
> recommendations I've read to translate to "any (pentode) video
> amplifier", but I don't know if all video amp tubes have separate
> suppressor pins.

Yup 6CL6 is what I was thinking of as used in many of the novice and heathy
things. The 12BY7 is the standard driver tube. The 5763 was used also
as oscillator and driver tube in the 50's and 60's.

Has anyone ever found a sub for the 6CL6? That pesky critter is a tad

All I had was a "6552A" Texas Instruments transzipper for the PNP jobbie. It DOES seem to be switching but the TV Horizontal Output transistor is ON all of the time.

I wonder if WB8VGE made some sort of mistake that was later corrected?
Perhpas that is supposed to be either 1 uF or 100 pF I dunno....

I run all of this on about 5.5V DC from an AC supply that I use on my CMOS Logikeyer II. It seems like this is going to give me inverted keyin anyway, as the voltage on the collector of Q1 is normally about 2V and then goes to about 1V when I key a "mark" from the keyer. Of course, either condition sets Q2 to ON and keys the cathode!

Yes, this IS for tube/BA rigs guys!!

Any ideas? My guess is I have te remove the PNP (Q1) and rearrange the biasing until it flies right. I just hate to use guesswork.

Any takers?

Bry, AF4K

```
*****  
*** 73 from Radio AF4K/G3XLQ Gaithersburg, MD USA *  
** E-mail to: bry@mnsinc.com *  
*** See the interesting ham radio resources at: *  
** http://www.mnsinc.com/bry/ *  
*****
```

Date: Tue, 20 May 1997 15:41:45 -0700 (PDT)
From: Ken Gordon <keng@uidaho.edu>
Subject: Re: Vackar Oscillator (was: 6146 Transmitter)

On Tue, 20 May 1997, Jeff Duntemann wrote:

>
> >My favorite at this point is the Vackar. I have not yet figured out how
> >to use the Seiler. Vackar oscillators, when properly built, seem to be
> >driftless and chirpless (well, almost...)
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> I have the seminal article on the sold-state Vackar from *Ham Radio* in the
> Seventies. I would love to investigate a tube Vackar. Any pointers to
> articles? It would seem like the king of all VFOs.

Bill Orr's "radio handbook", 19th edition, page 11.2, figure E, page 11.3
figure F, page 11.4 description.

RSGB "Radio Communication Handbook", 1972, page 6.14, figure 6.25 and
accompanying text.

Another thing I like about it is its constant output over a very wide
range of frequencies, and its 2:1 or better tuning range.

Let us know what you come up with.

Ken W7EKB

Date: Tue, 20 May 1997 18:07:13 -0500

From: "Robert M. Bratcher Jr." <bratcher@worldnet.att.net>

Subject: High power xtal osc rigs

>If you want to try a high-power xtal set (150watt 813 tube), look on the
>back cover RCA ads from about 1939 or so in QST, and there is a tiny
>little schematic, about an inch and a half square, that IF you blow it
>up several times, is a complete 150watt xtal oscillator using the 813 tube.

And what kind of crystals would you use in this one tube 813 rig?
FT-243's worked in the QSL-60 I built using a 6L6WGB but I don't know about
higher power! Will FT-243's work above 60 watts or do I hunt for a bigger
crystal?

I've got some late 30's QST's and a spare 813. Might be worth building...

The QSL-60 & QSL 40 were in QST sometime in the 40's. Have to check my back
issues sometime.

Robert M. Bratcher Jr.

E-mail to:

bratcher@worldnet.att.net

Record collector, 8mm, super 8, 16 and 35mm Film collector.

Looking for prerecorded reel to reel tape albums.

I like old radio's too.

Collins, Hallicrafters, National & Hammurland are my Favorites!

Date: Tue, 20 May 1997 19:45:50 EDT

From: kmlh@juno.com

Subject: Re: 6146 Transmitter

On Tue, 20 May 1997 17:27:54 -0400 (EDT) rdkeys@csemail.cropsci.ncsu.edu
writes:

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>> The 6CL6 is (nearly) the miniature 6AG7. 12BY7 and 5763 were also

>used

>> very commonly. Towards the end of the tube era the ARRL Handbooks

>were

>> pushing another tube (6GK6?). I've internalized the oscillator tube

SNIPS

Has anyone ever found a sub for the 6CL6? That pesky critter is a tad

>scarce these days, and I can find no direct sub for it in my tube

>basing

>charts. I sense a run on them forthcoming as fodder for heathy rigs.

>

>The 12BY7 is probably going to be like sweep tubes, a tad scarce,

>since

>most of the hybrid rigs of the 70's use that as the driver tube.

Hi Bob, my supply of 12BY7's is very low for the reasons you mentioned.

However I have an ample supply of 6CL6, 5763 and 6GK6 types.

Since this reflector is into homebrew and mods, etc I wonder if someone

could explain the substitution difference between those three tubes and the 12BY7 ??

The reason I ask is that I picked up a pair of Heath DX-35's at the Rochester, NH Mudfest. After moving parts around I wound up with one TX minus a pair of 12BY7's.

My idea is to convert the "parts unit" (about a 5 cosmetics) to a strictly 6 and 10M AM rig. My initial thoughts are to use a 6CL6 as the osc and a 5763 as the driver to the 6146. Besides socket wiring and basic Eg..Es parameters does anyone see a problem?

Tnx for any info.

73...Carl KM1H

>

>The 5763 should be fairly common, methinks, though. It was used in a
>lot

>of the test equipment I have stripped around here (egads, bad
>wording...).

>

>Anyone got an good subs for these as ``television'' style
>replacements?

>There has gotta be some sleepers in the odd tv tube category that
>would

>work quite well. Something like a 3xxx or a 5xxx thingie, would seem
>like usable for a small oscillator tube. A 3xxx thingie, with a
>series

>resistor nearby the oscillator section, might work as a small heating
>element to help stabilize the vfo, under average conditions by adding
>a

>watt or two to the cabinet. An 8xxx tube might be good that same way
>off a 12V string.

>

>Gee, sound like we are inventing the generic Glowebugge vfo,
>here.....

>

>Bob/NA4G

>

>

Date: Tue, 20 May 1997 19:10:15 -0500 (CDT)

From: Dave <gekko95@ix.netcom.com>

Subject: Re: High power xtal osc rigs

Bob Bratcher quipped:

>And what kind of crystals would you use in this one tube 813 rig?

>FT-243's worked in the QSL-60 I built using a 6L6WGB but I don't know about
>higher power! Will FT-243's work above 60 watts or do I hunt for a bigger
>crystal?

Bob,

I have a rock in an aluminum holder almost the size of my hand

labeled "740.000 KC". Ya 'spose that might work? Oh - wrong band!

:)

Dave WB7AWK

Date: Tue, 20 May 1997 19:37:48 -0500 (CDT)
From: Spencer Petri <spetri@e-tex.com>
Subject: Re: 6146 transmitter

The 12GN7 is a very nice lil bottle for oscs and mulipliers. All pins come out seperately and it has a CT filament plus they're still around CHEAP.

73 de Pete WA5JCI

EM-21--6 Mtr -- WAS #490, WAC CW, DXCC/91 Countries, VUCC #361/618 Grids

2 Mtr -- 36 States -- VUCC #346/183 Grids

Date: Wed, 21 May 1997 02:07:42 +0000
From: Sandy W5TVW <ebjr@worldnet.att.net>
Subject: Re: High power xtal osc rigs

At 11:07 PM 5/20/97 +0000, you wrote:

>>If you want to try a high-power xtal set (150watt 813 tube), look on the
>>back cover RCA ads from about 1939 or so in QST, and there is a tiny
>>little schematic, about an inch and a half square, that IF you blow it
>>up several times, is a complete 150watt xtal oscillator using the 813 tube.
>

>And what kind of crystals would you use in this one tube 813 rig?
>FT-243's worked in the QSL-60 I built using a 6L6WGB but I don't know about
>higher power! Will FT-243's work above 60 watts or do I hunt for a bigger
>crystal?

>I've got some late 30's QST's and a spare 813. Might be worth building...
>

>The QSL-60 & QSL 40 were in QST sometime in the 40's. Have to check my back
>issues sometime.

I have a two tube push-pull crystal oscillator (adapted from circuit in Jones 1936 Handbook) that uses a pair of 50JY6 beam tetrodes (TV sweep tubes). It is operated right off a doubler power supply that is "transformerless" and works right off the line.

Power input is about 110-120 watts. (325v @ 340-360 ma.). It delivers about 40-45 watts out which is not bad for an oscillator. I have had no crystal problems with it (HC-6/U or FT-243's). One oscillator circuit you have to watch is the famous "Tri-Tet" circuit. It works nicely, but has to be adjusted very carefully or it is a crystal blower!

There was one that used a single RK-20 pentode in the 1836 ARRL Handbook.

I'd bet that one could be built using a single 803 or 813! In my push-pull oscillator, you can use only a fundamental crystal, where in the "TriTet" you can use an 80 meter rock on 80 or 40 and even on 20. They are harmonic generators though and prone to TVI!

73

E. V. Sandy Blaize, W5TVW

"Boat Anchors collected, restored, repaired, traded and used!"

417 Ridgewood Drive,

Metairie, LA., 70001

ebjr@worldnet.att.net

Looking for: 860 tubes, WL-460 tubes

Butternut HF2V antenna, G-R test gear.....*

Date: Thu, 20 Feb 97 19:18:52 PST

From: "Adam, KD6POC" <kd6poc@jps.net>

Subject: CQ Crystal Control Ops!

Hello There, fellow glowbuggers!

I notice that from our current discussion on self excited 75 watt 6146 = TXs, maybe it's time to scare up some crystal ops for the VCW net. This = net is a few years old, and it exists solely for operators of vintage rad= io gear. It is a CW net, but speed is not important and you can check in = using any speed that feels comfortable to you. It is usually run by Tracy= , WB6TMY. For more info, including the net roster, be sure to check the = web site:

www.metro.net/radions

The net is run every Sunday at 2300 Zulu. The frequency is 14,037 Kcps. = If your crystal controlled TX is not operating on this frequency, notify = us before hand via E-mail so we will know where to tune to hear you.

We look forward to hearing from you on the net!

Best of 73,

Adam

Adam McLaughlin KD6POC

QRG: 7037 KHz

kd6poc@jps.net

<http://www.jps.net/jmclaugh>

Date: Wed, 21 May 1997 12:35:37 +1000

From: Murray Kelly <mkelly@faraday.dialix.com.au>

Subject: Re: 810 info needed

Yup! I just KNEW those old books I bought a few weeks ago at the local hamfest would be useful - to someone.

I have some of these tubes myself. NIB for US\$4

ea. Unfortunately the source has dried up.

Now, how do I get them to you? Gotta fax?

Conard Murray wrote:

>

> Hello all,

> Does anyone have any design curves for the 810?

```
*****  
*      Murray Kelly vk4aok      mkelly@faraday.dialix.com.au      *  
*      29 Molonga Ter. / Graceville/ QLD. 4075/ Australia      *  
*                        ph/fax Intl+ 61 7 3379 3307      *  
*****
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End of glowbugs V1 #37

%%%% GlowBugs %%%% GlowBugs %%%% GlowBugs %%%% GlowBugs %%%%

[AB4EL Ham Radio Homepage @ SunSITE](#)

Created by **Steve Modena, AB4EL**

Comments and suggestions to **modena@SunSITE.unc.edu**
